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FILING DATE: *October 15, 2004*

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Transmittal of Provisional Application

Commissioner for Patents
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Inventor(s): Gordon L. Anderson, Hudson, Wisconsin

Title: LOCATOR TOOL ASSEMBLY

00746 U.S. PTO
60/619144

1. ☒ Enclosed is the above-identified new provisional application for patent under 35 USC § 111(b)(1). It includes:
 4 Pages of Text
 16 Sheets of Drawings
2. ☐ Enclosed is an executed Assignment to 3M Innovative Properties Company and a completed Assignment Recordation Cover Sheet.
3. ☐ This invention was made under a contract with an agency of the U.S. Government:
 Agency: _____
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4. ☒ Correspondence Address: Harold C. Knecht III
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 3M Innovative Properties Company
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 St. Paul, Minnesota 55133-3427
5. ☒ Please charge the \$160.00 filing fee under 37 CFR § 1.16(k) to Deposit Account No. 13-3723. One copy of this sheet marked duplicate is also enclosed.
6. ☒ Please charge to Deposit Account No. 13-3723 any fees under 37 CFR §§ 1.16 and 1.17, which may be required to file and during the entire pendency of this application. This authorization includes the fee for any necessary extension of time under 37 CFR § 1.136(a). To the extent any such extension should become necessary, it is hereby requested.
7. ☒ Enclosed is a return receipt postcard.

Respectfully submitted,

October 15, 2004

Date

By: 

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Filing of Papers and Fees by Express Mailing

Pursuant to 37 CFR § 1.10, this application and the documents and fees listed on this transmittal letter are being deposited on the date indicated below with the United States Postal Service "Express Mail Post Office to Addressee" service addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

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LOCATER TOOL ASSEMBLY

Field of the Invention

The present invention relates to paint replacement films and tapes, in particular, to tools and methods used to apply such films or tapes to a desired adherend, and more particularly, to such tools and methods that are used in the application of paint replacement films or tapes to portions of a vehicle (e.g., an automobile, aircraft, watercraft, etc.).

Background

Adhesive backed (e.g., pressure sensitive adhesive backed) paint replacement films or tapes have been used to color portions of a vehicle such as, for example, body portions of an automobile. One such tape is colored black and has been used to color various portions of an automobile door such as, for example, the window sash and/or pillars of an automobile door. Various tools have been devised for assisting in the application of such tapes to the automobile door. For example, there are tools that locate the tape at the desired position on the automobile door before the tape is actually adhered to the door. An example of such a tape locator tool can be found in Japanese Kokai Patent Publication No. JP2003063729, entitled ADHESIVE TAPE AFFIXING AUXILIARY JIG, AND ADHESIVE TAPE AFFIXING METHOD UTILIZING THE JIG, assigned to the assignee of the present application, with the inventor: FUJINO TAKAYOSHI, Application No. 2001259972, filed August 29, 2001, and published March 5, 2003. Such tools have included structure for securing the tool to the door and for holding the tape adjacent to the location on the door that the tape is to be adhered. In this way, the tape can be more accurately and consistently applied to the desired portion of the automobile door. The paint replacement tapes used with such tape locator tools include a release liner for protecting the pressure sensitive adhesive (i.e., PSA) until the tape is applied. Examples of such paint replacement tapes can be found in U.S. Patent No. 6,748,993.

The present invention provides an improvement in such locator tool technology.

Summary of the Invention

A locator tool, according to the present invention, includes one or more pins for securing a paint replacement tape or film. The paint replacement tape or film used with the locator tool includes one or more portions that are secured to one or more such locator tools via the pin(s). It can be preferable for the tape or film to include one or more removable tabs that are secured to the locator tool(s). The removable tab(s) can be formed by one or more portions of the paint replacement tape or film. It can be preferable for each tab to be designed so as to be separable from the remainder of the tape or film, for example, by use of a perforated line. For example, a perforated line can be formed widthwise across the paint replacement tape, for this purpose. This perforated line can make it easier to detach and discard each tab after the remaining portion of the paint replacement tape or film is adhered to the desired substrate (e.g., an automobile door). One or more corresponding holes are formed through each tab so as to allow the tab to be pushed onto the pin(s). That is, each hole is sized and positioned to receive a pin from the locator tool therethrough. By sizing the hole and pin to have snug fit, the location of the paint replacement film or tape can be more accurately maintained.

One problem that has been encountered in using such a locator tool, according to the present invention, is related to the process of removing tabs from the locator tool pins. Multiple paint replacement films or tapes can be applied using the same locator tool, e.g., to reduce application time. For example, after separating the tab from the remainder of the paint replacement tape or film, the tab can be left on the correspond pin(s). By providing pins of appropriate length, additional paint replacement tapes or films can be applied using the same locator tool, with the separated tab of each being subsequently left in position on the corresponding pin (s). As the tabs build-up, their removal from the pin(s) becomes more and more difficult, especially when the hole(s) in the tab and the corresponding pin(s) are designed to fit snugly together. The present invention provides a way to quickly and easily remove multiple tabs, of the paint replacement films and tapes, that have built-up on the pin(s) of each locator tool.

Detailed Description of Inventive Embodiments

The present inventive stripper assembly can be used with any locator tool capable of positioning a suitably shaped paint replacement film or tape for application onto, for example, the sash and/or pillar of an automobile door. Referring to Figs 1-3, one such exemplary tool 20 has two pins 22 that are dimensioned so as to be snugly received into corresponding holes 24 in a removable tab 26 portion of a paint replacement tape 12 so as to locate the tape 12 relative to the door 18 via the tool 20. The tool 20 has six magnets 28 that hold the tool 20 in place on a corner of the door 18. The tool 20 has a groove or slot 30 that fits the door 18 so that the tool 20 attaches to the same door location each time the tool 20 is attached to the same type of door 18. After the tape 12 is located, the operator removes the tape liner (not shown) behind the tape 12 and applies the exposed adhesive side of the tape 12 to the door 18 by, for example, applying pressure using a squeegee or other conventional technique. The exemplary tool 20 has a contour or shape that allows it to fit on only one type of door 18. With such a tool 20, for example, four different tools would be required for a four door automobile. However, the present stripper can be used with more versatile or universal locator tools (i.e., a tool that can be used on more than one door design) and, therefore, the present invention is not necessarily intended to be limited to any particular tool design. The tool 20 has a groove 32 and the tape 12 has a score line or perforated line 34 that lies over this groove 32. The line 34 allows the tab 26 to be removed from the remainder of the tape 12. The operator breaks the score line 34 by pushing down along the groove 32, for example, with the squeegee used to press the tape 12 to the door 18. The tool 20 along with the attached tab 26 are then removed from the door and the edges of the tape 12 are pressed or wrapped around the edges of the door 18 by hand or with a squeegee. This tape application process can be repeated over and over using the same tool 20, with the tabs 26 of the subsequent tapes 12 piling up one on top of the other on the pins 22. The number of tabs 26 on the pins 22 can reach an undesirable number (e.g., when the tape 12 is suspended so far away from the door 18 that it becomes difficult to insure proper location of the tape 12 on the door 18).

A stripper assembly according to the present invention such as, for example, the stripper assembly 40, illustrated with an alternative locator tool 42 in Figs 4 and 5, can be used to quickly and easily remove a built-up of tabs 26. The tool 42 is similar to tool 20 except, for example, tool 42 has two grooves 30, one groove 30 on either side of the tool 42, and two sets of pins 22, one set of two pins 22 on each side of the tool 42. The extra groove 30 and extra set of pins 22

enable the tool 42 to be used with mirror images of the same door (e.g., a left and right side front door). . The exemplary stripper assembly 40 comprises two stripper plates 44, one on each side of the body of the tool 42, and two connecting pins 46 that slidably passes through the body of tool 42 and connects the plates 44 together. The plates 44 are spaced apart a distance wider than the width of the body of the tool 42 such that, by pushing one plate 44 toward or against the tool body, the plate 44 on the other side (i.e., the side with the stack of tabs 26) forces the stack of tabs 26 to slide off of the pins 22 on which the tabs 26 are located.

The stripper plate feature added to the tool allows the tabs to be popped off with minimal finger force applied to the opposing side stripper plate.

What is Claimed is:

1. A locator tool assembly comprising:
a locator tool comprising one or more locator pins; and
at least one stripper assembly comprising one or more slide pins connected to a stripper surface,
wherein the one or more pins are slidably disposed so as to enable the stripper surface to forced away from the locator tool.

Figs 1a

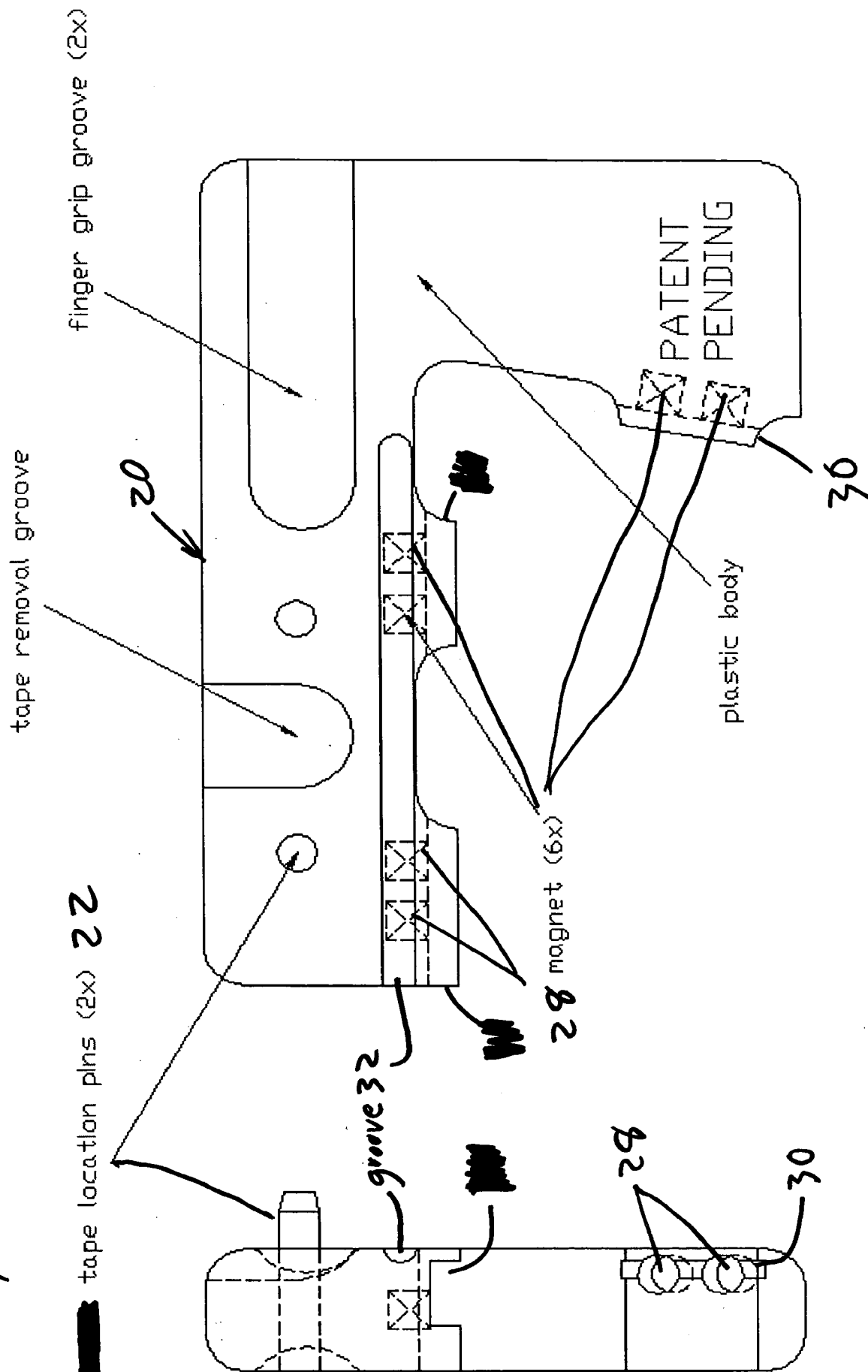
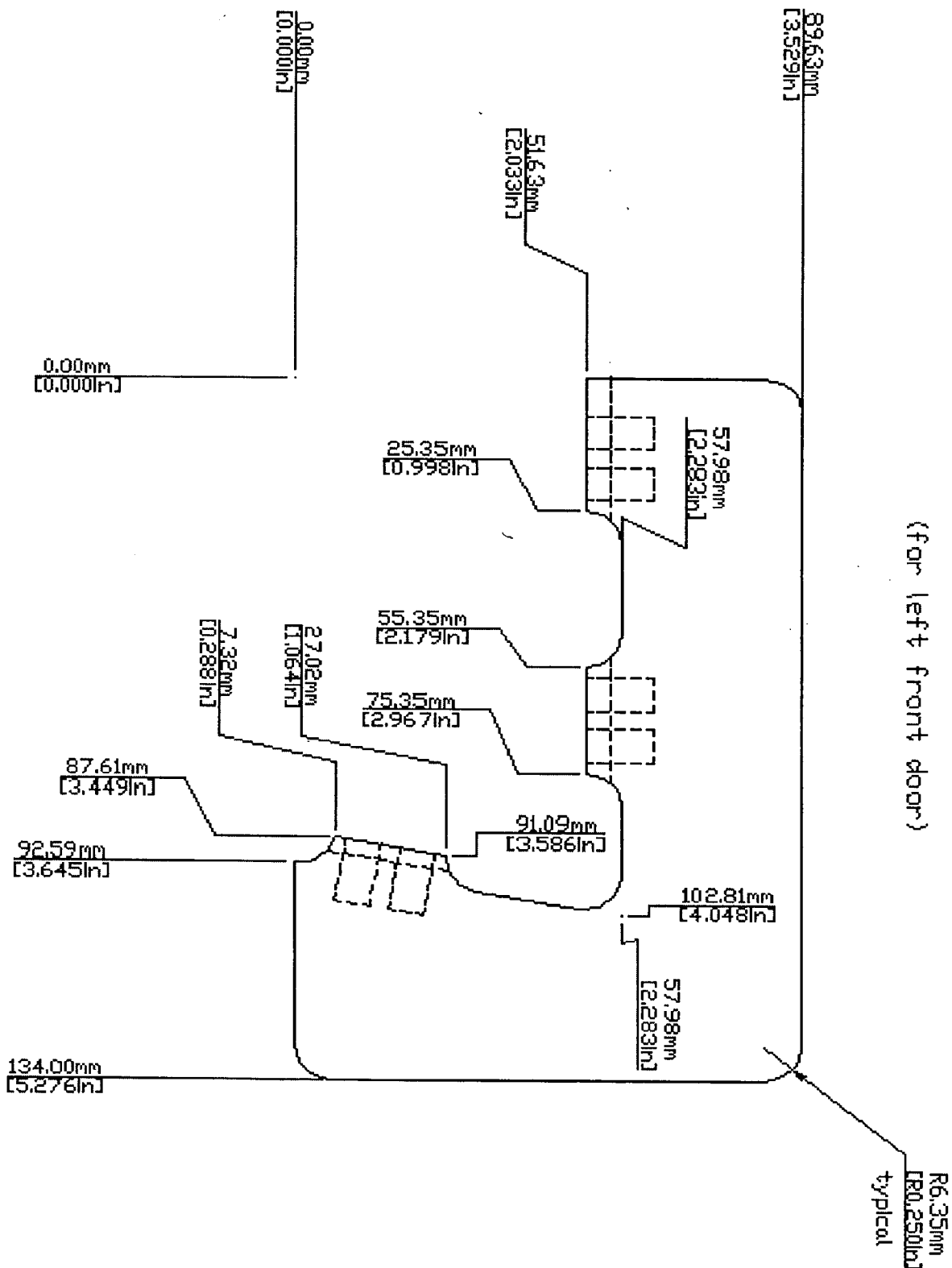


Fig. 1b

ALIGN TOOL
Matl = white Delrin
Scale = 1:1

(for left front door)



Figs. 1c

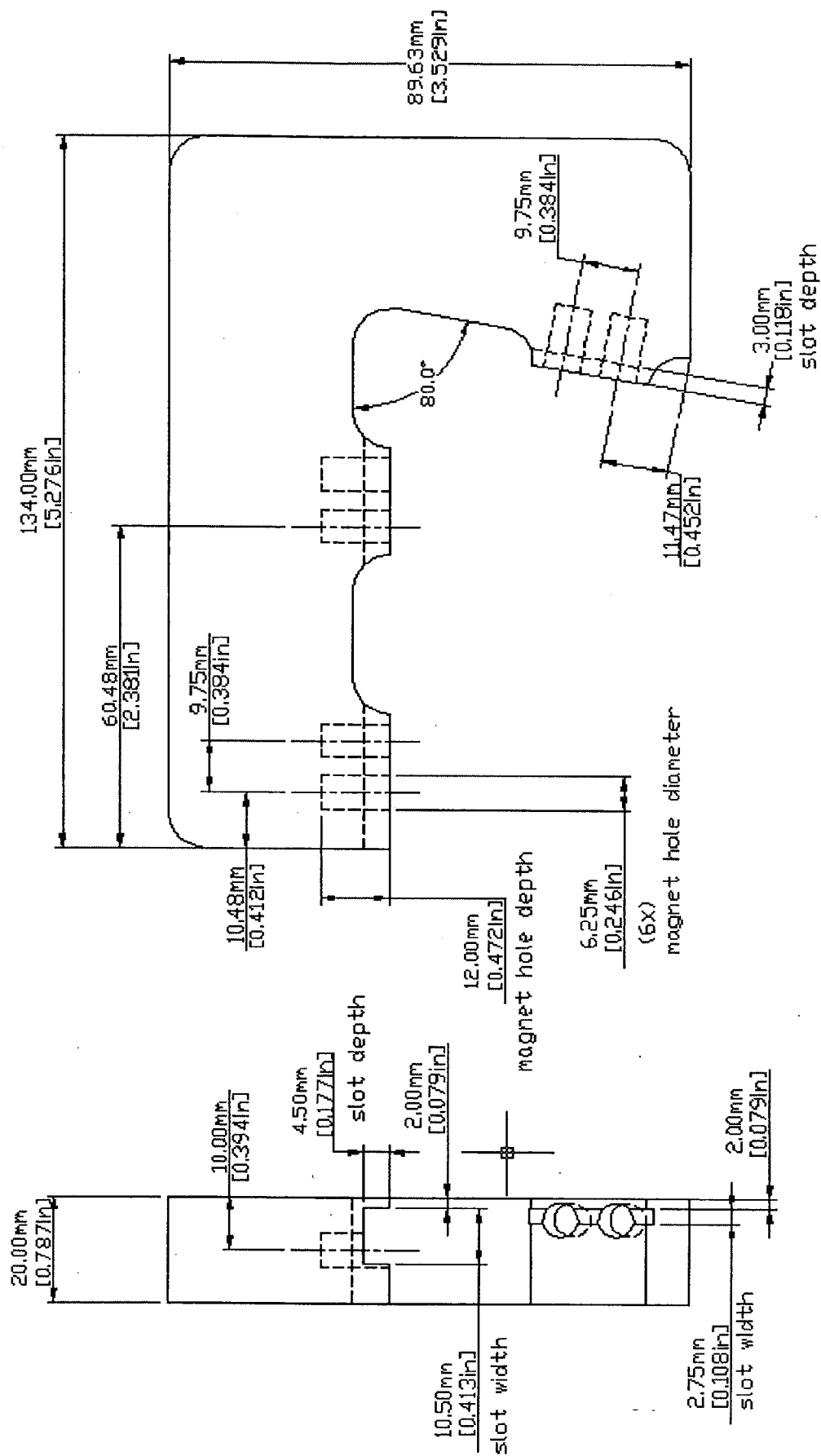
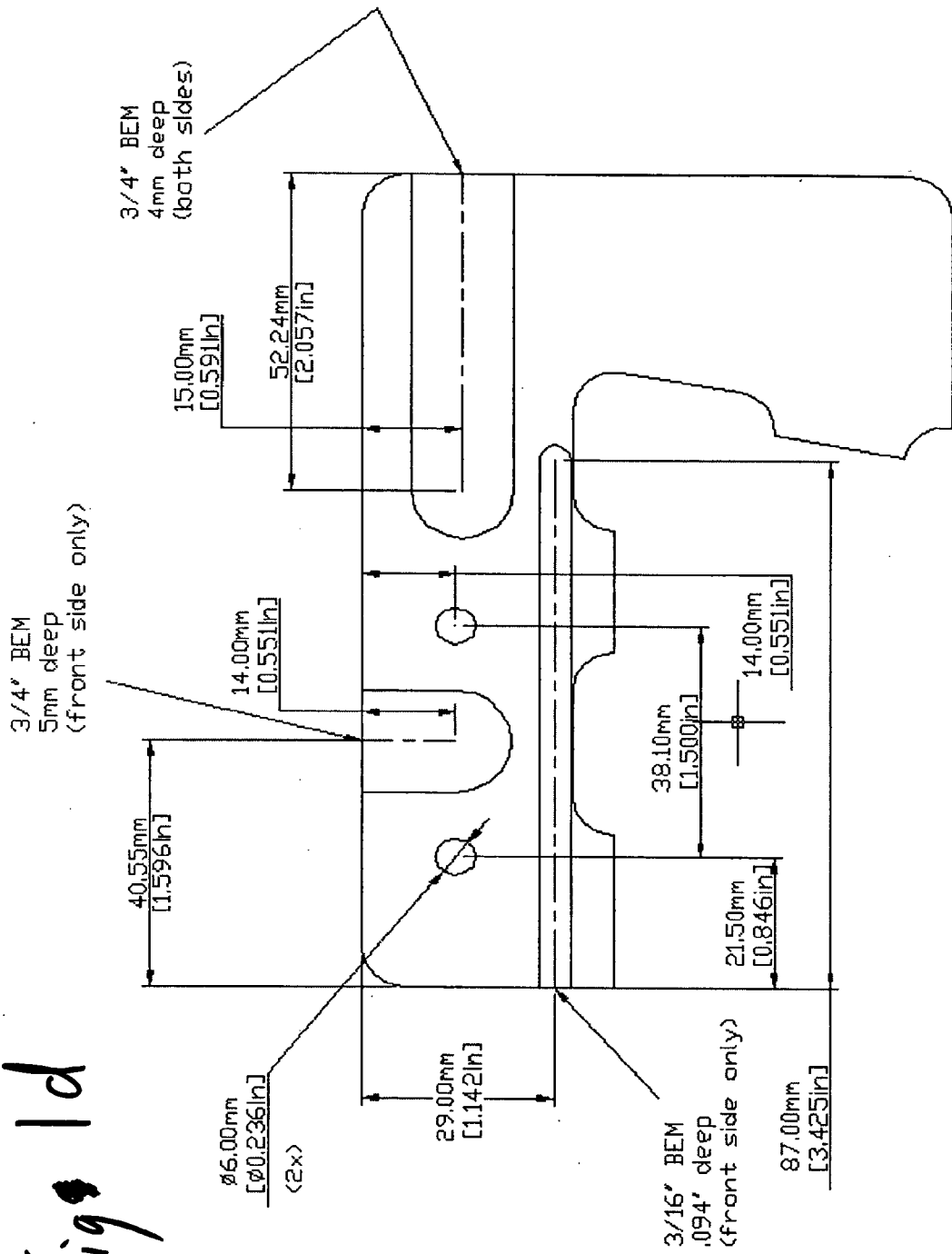


Fig 1d



Use 1/4" Radius Cutter on bold edges
(both sides)

Fig. 1c

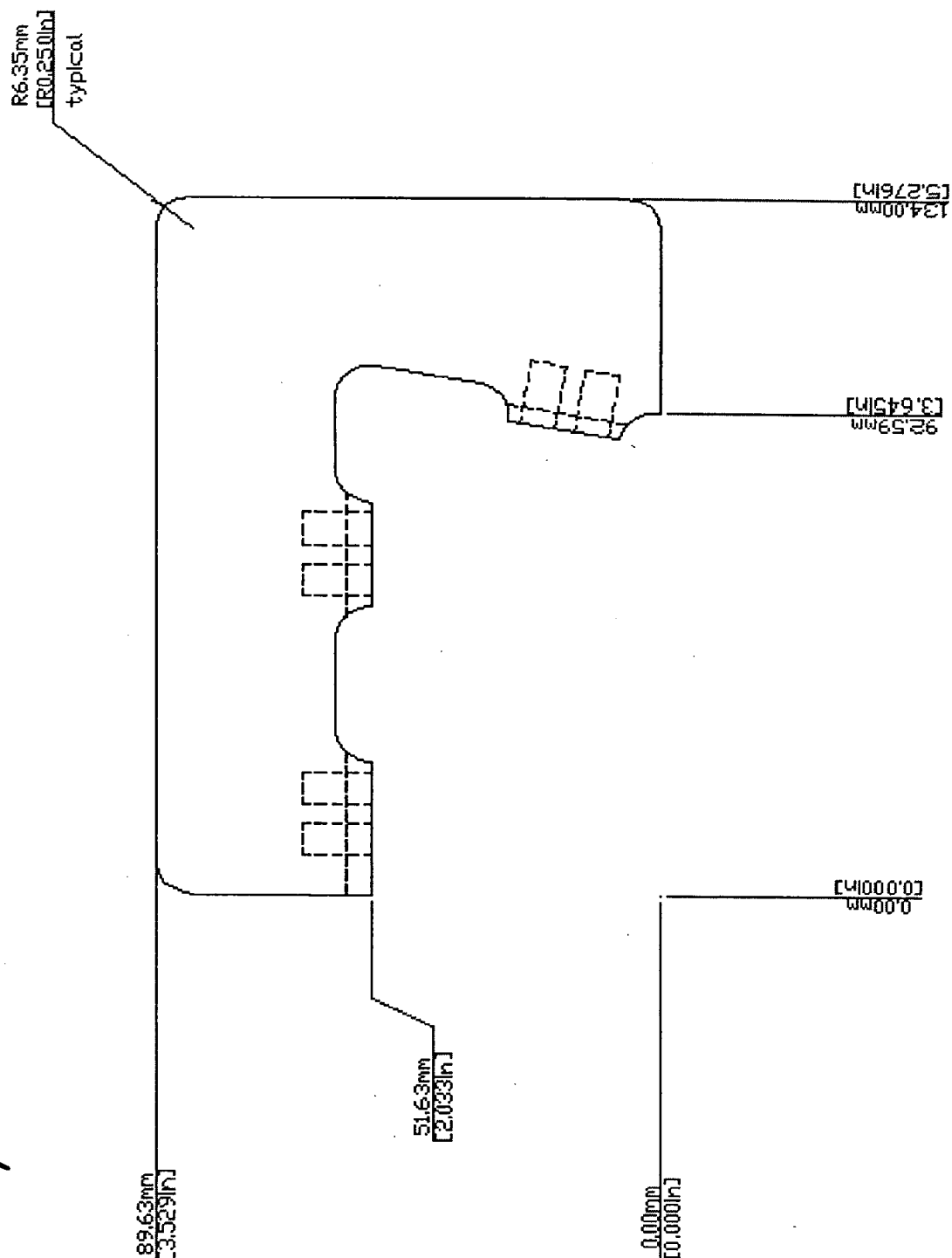


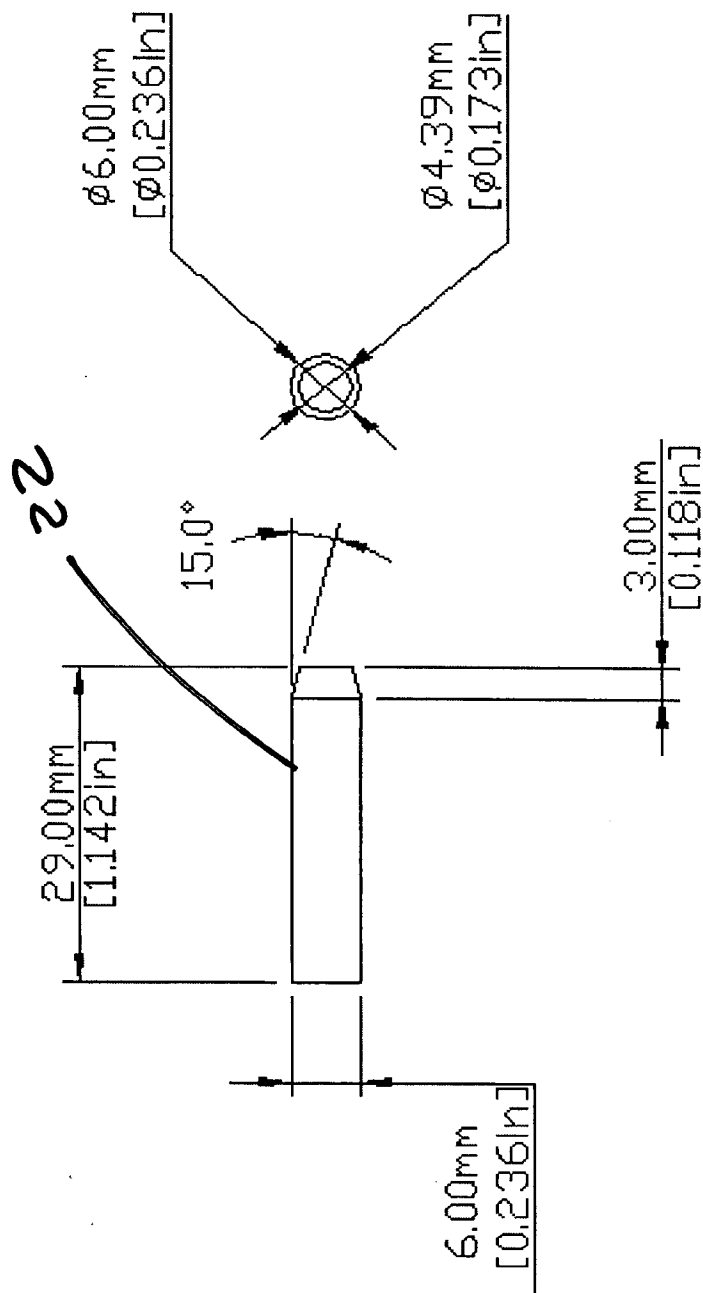
Fig. 1 f

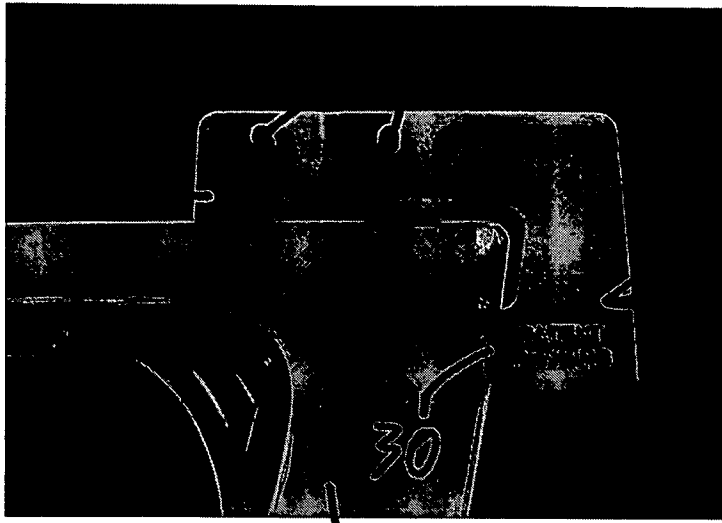
ALIGN PINS

Two needed per tool

Matl = black Delrin

Scale = 1:1





20

Fig. 3

18

Fig. 3

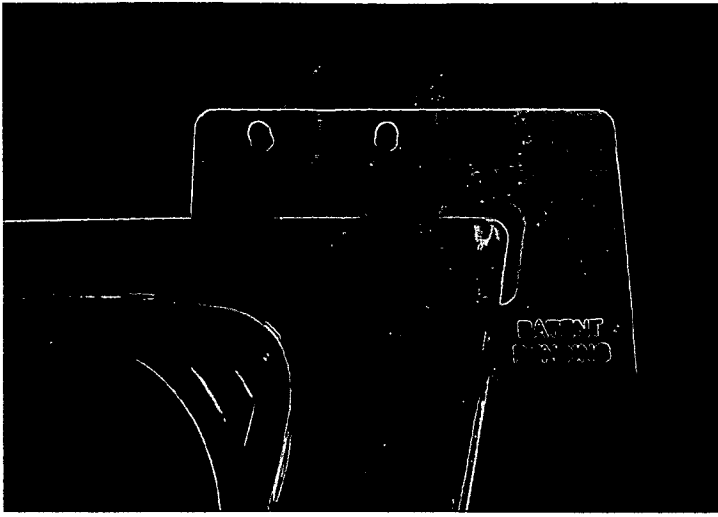
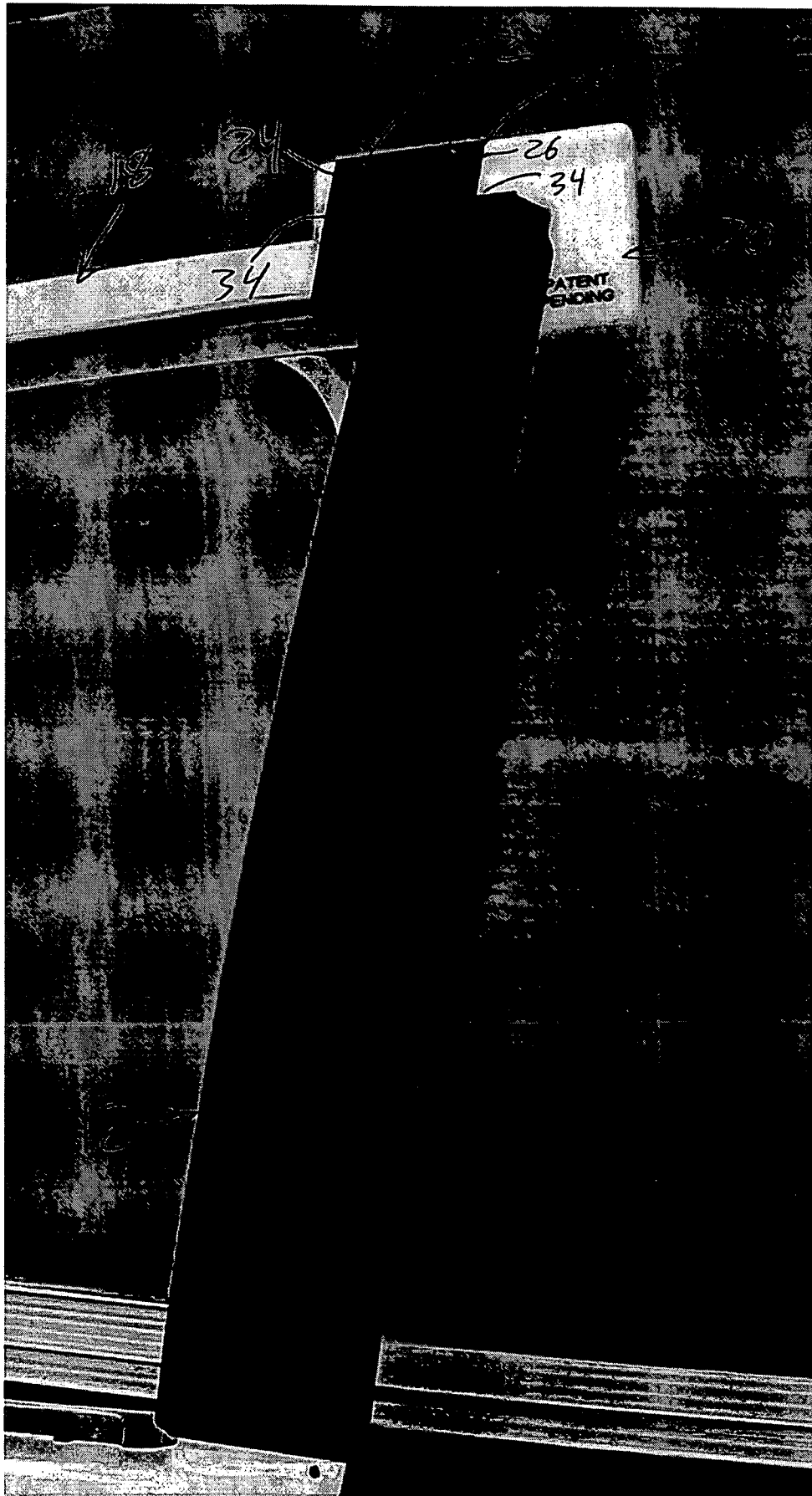
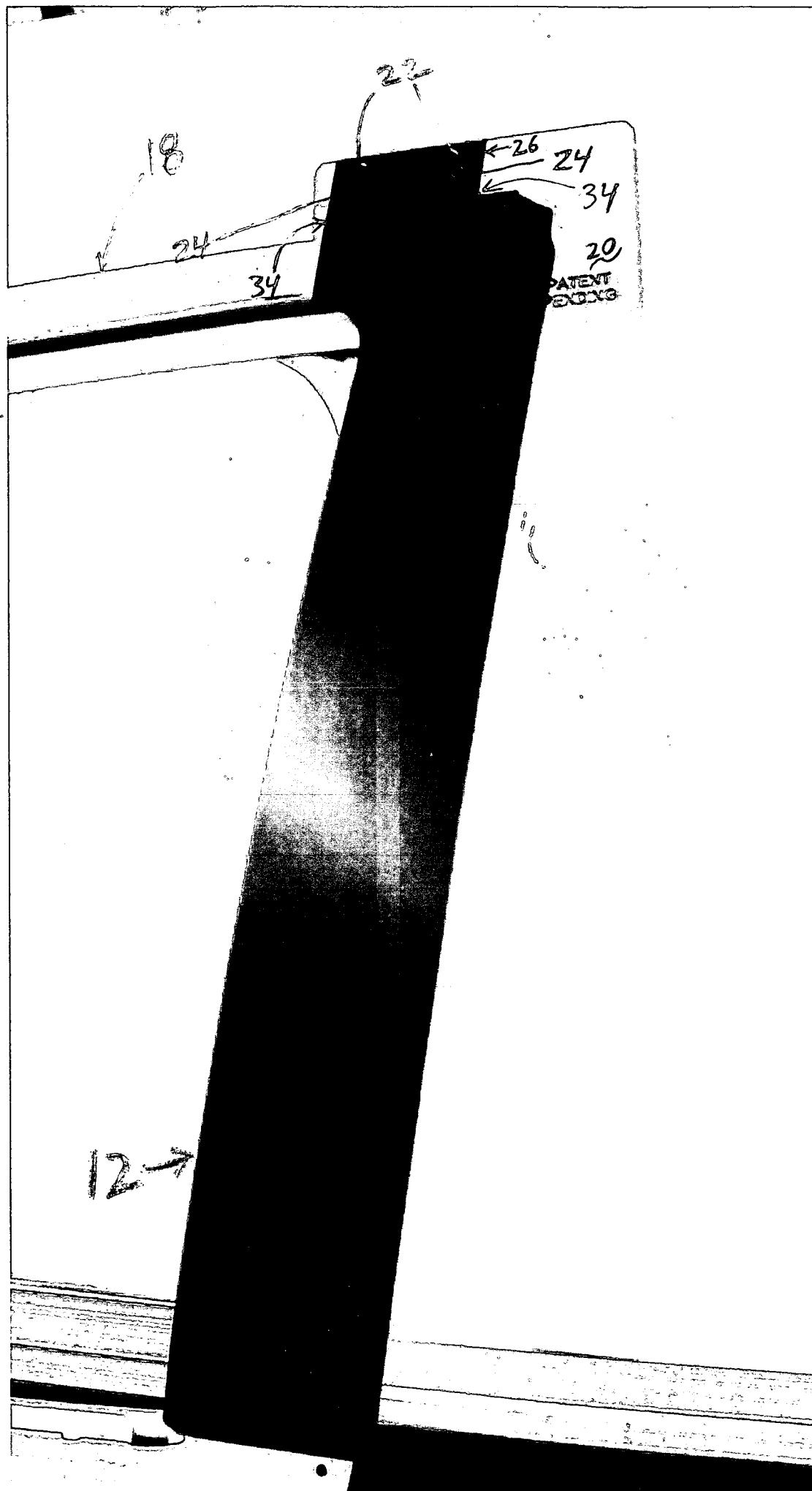


Fig 2.



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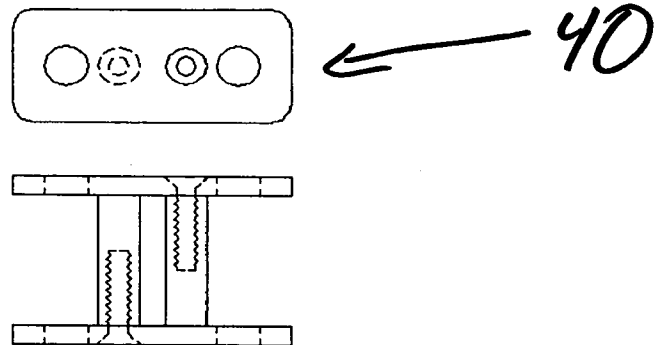
Fig. 2



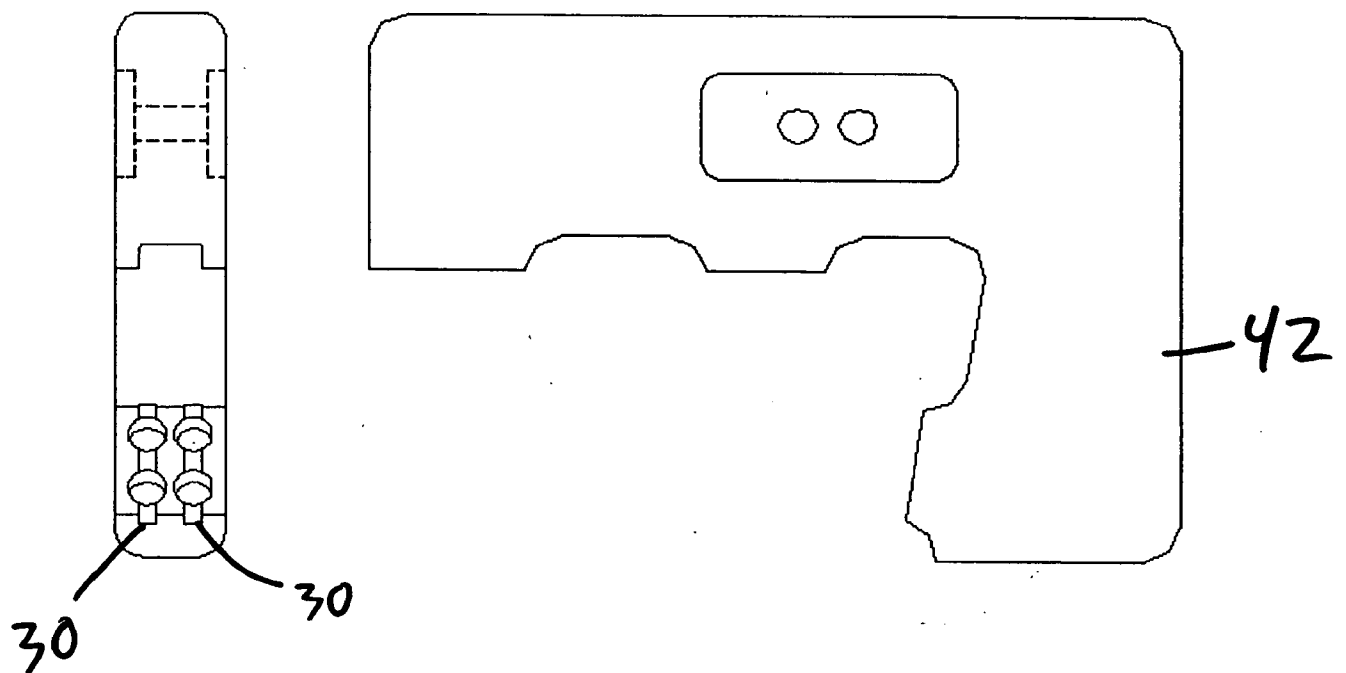
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Figs. 4a

Stripper Plate



Stripper Plate Inset Detail



~~XXXXXXXXXX~~ ALIGN TOOL
Matl = white Delrin
Scale = 1:1
~~XXXXXXXXXX~~



Grooving Detail

Technical drawing of a mechanical part with the following dimensions and features:

- Overall width: 104.01mm [4.095in]
- Overall height: 77.79mm [3.063in]
- Top width: 62.22mm [2.450in]
- Top thickness: 1.24mm [0.049in]
- Bottom thickness: 1.24mm [0.049in]
- Bottom width: 20.00mm [0.787in]
- Bottom angle: 81.0°
- Detail view (4X scale):
 - Feature: 0.072" O.C.
 - Feature: use 1/16" ball end mill
 - Feature: 0.020" deep

Technical drawing of a mechanical part, showing front and side views with dimensions in millimeters (mm) and inches (in).

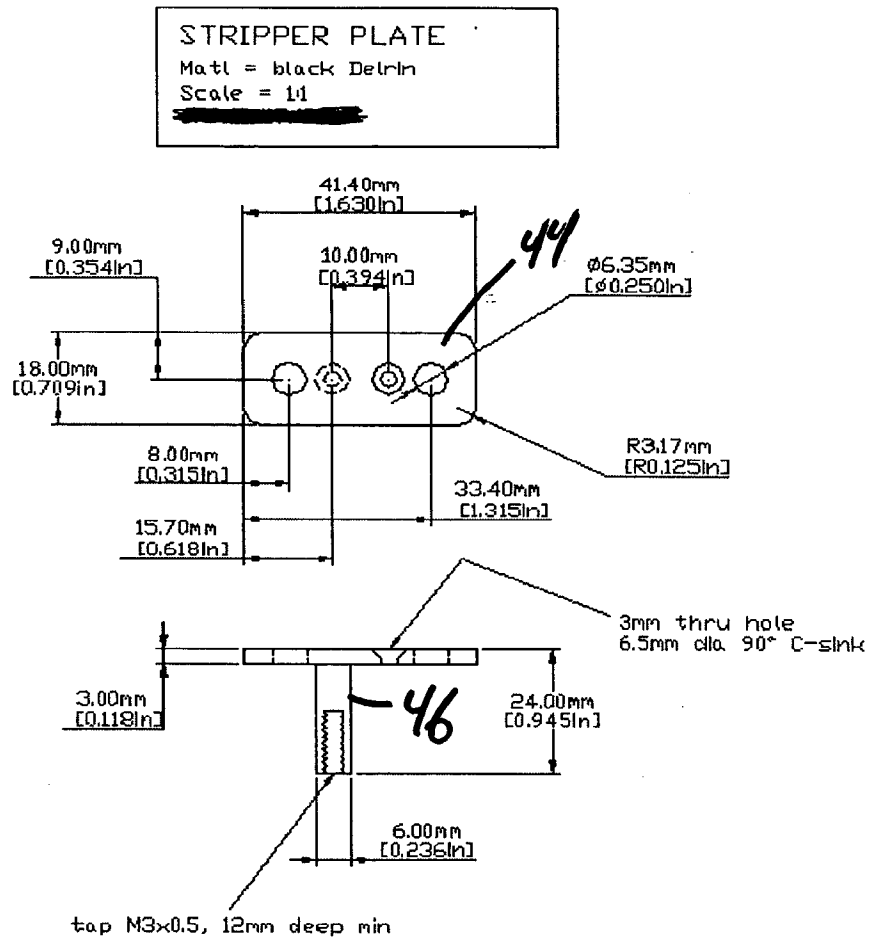
Front View (Left):

- Overall width: 3.00mm [0.118in]
- Overall height: 19.00mm [0.748in]
- Top section width: 3.00mm [0.118in]
- Bottom section width: 3.00mm [0.118in]

Side View (Right):

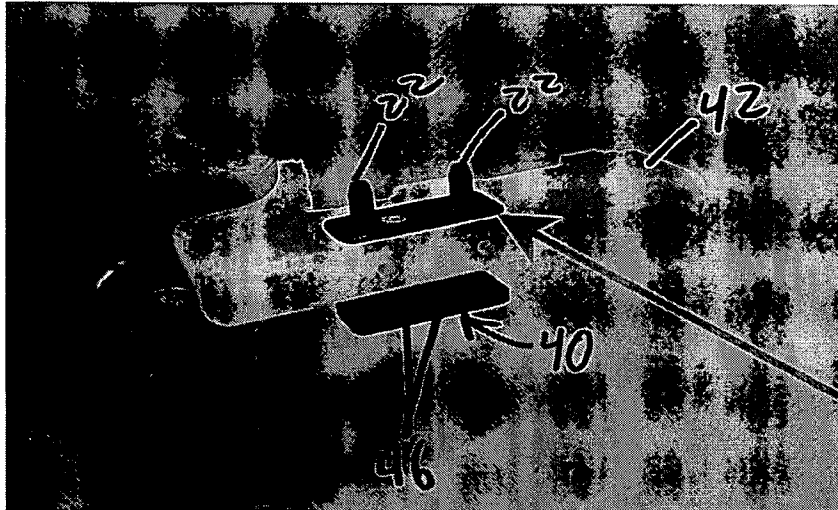
- Overall width: 10.00mm [0.394in]
- Overall height: 9.50mm [0.374in]
- Top section width: 8.50mm [0.335in]
- Bottom section width: 7.70mm [0.303in]
- Radius: R3.18mm [R0.125in]
- Four holes with diameter: $\phi 6.35$ mm [0.250in]

Fig. 4d



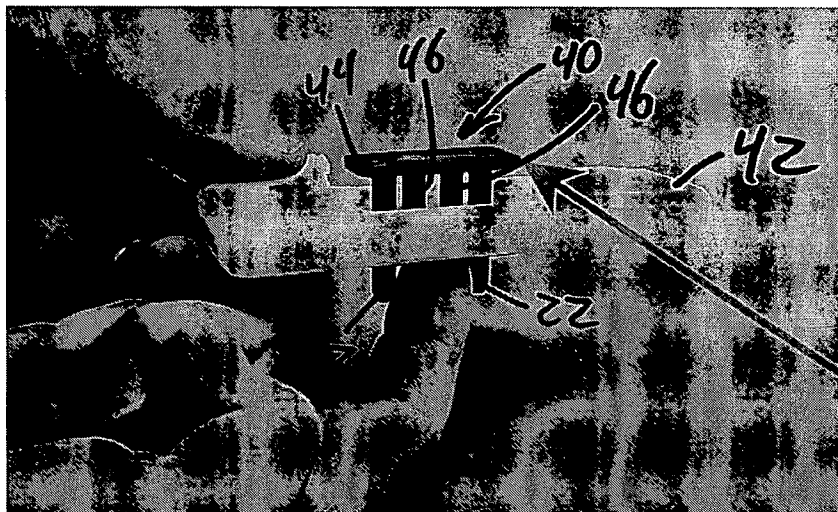
Images

Fig. 5a



Stripper Plate "IN"

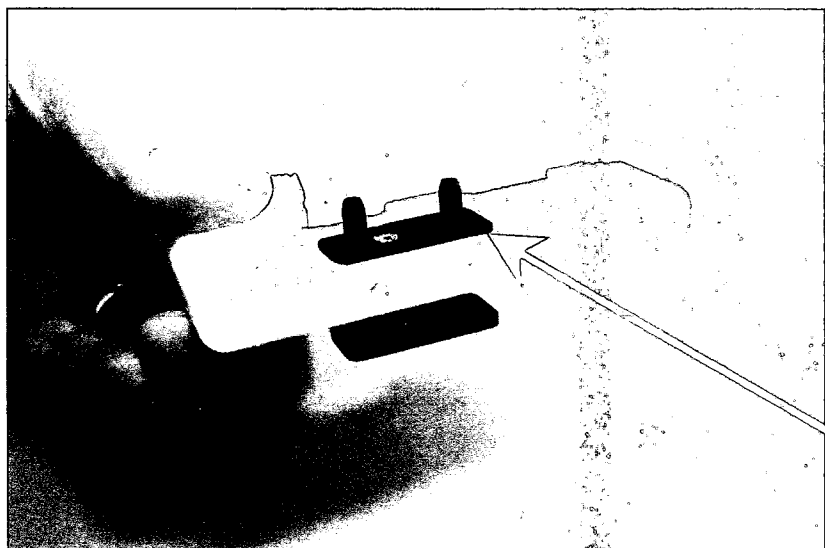
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Stripper Plate "OUT"

Images

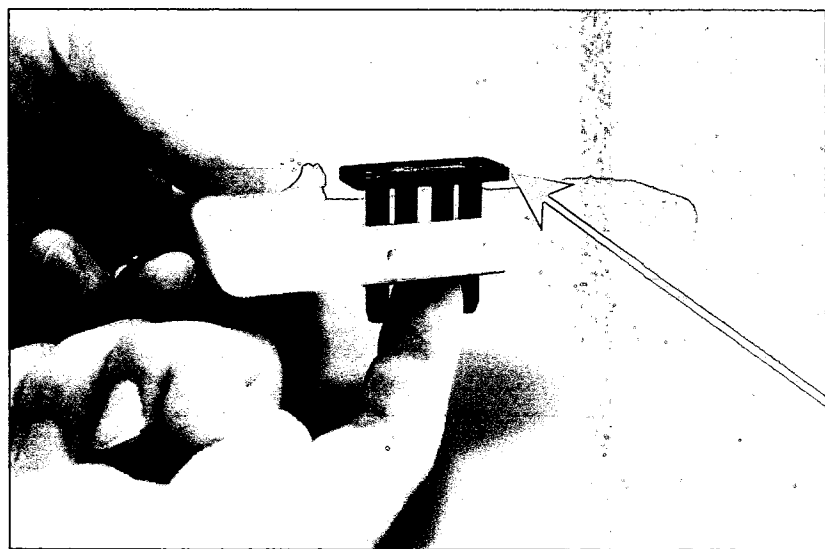
Fig. 5a



Stripper Plate "IN"

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Fig. 5b



Stripper Plate "OUT"

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